ERRATA: Numerical Solution of Differential Algebraic Riccati Equations*

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On p. 44, line 3 should read:

$$\tilde{A}(t) := \begin{bmatrix} A_{11} & A_{12} \\ A_{21} & A_{22} \end{bmatrix} := U^T(t)A(t)V(t) + \begin{bmatrix} \Sigma(t) & 0 \\ 0 & 0 \end{bmatrix} \dot{V}(t)^T V(t).$$

On p. 45, Equation (2.22) should read:

(2.22)

$$\Sigma(t)\dot{y}_1(t) = \left\{A_1(t) - B_1(t)R_1^{-1}(t)\left[S_1^T(t) + B_1^T(t)X_1(t)\Sigma(t)\right]\right\} y_1(t),$$

$$y_1(t_0) = y_1^0.$$

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On p. 46, the third line of Equation (2.23) should read:

$$+\begin{bmatrix} A_{11}^T & A_{21}^T \\ A_{12}^T & A_{22}^T \end{bmatrix}\begin{bmatrix} X_{11} & X_{12} \\ X_{21} & X_{22} \end{bmatrix}\begin{bmatrix} \Sigma & 0 \\ 0 & 0 \end{bmatrix}+\begin{bmatrix} Q_{11} & Q_{12} \\ Q_{21} & Q_{22} \end{bmatrix}$$

On p. 51, Equation (4.4) should look as follows:

(4.4)

$$N=\begin{bmatrix} 0 & \alpha_1 & & & & \\ & \ddots & \ddots & & & \\ & & \ddots & \ddots & & \\ & & & \ddots & \alpha_{n-r-1} & \\ & & & & 0 & \end{bmatrix},$$

$$J=\begin{bmatrix} \lambda_1 & \beta_1 & & & & \\ & \ddots & \ddots & & & \\ & & \ddots & \ddots & & \\ & & & \ddots & \beta_{r-1} & \\ & & & & \lambda_r & \end{bmatrix}.$$

On p. 60 the last line should read:

such that $U^T(t_f)E(t_f)V(t_f)=\Sigma(t_f)=\operatorname{diag}\{\sigma_1(t_f),\ldots,\sigma_n(t_f)\}$, $\sigma(t_f)\geqslant\cdots\geqslant\sigma_n(t_f)\geqslant 0$.

On p. 65, Equation (6.1) should read:

(6.1)

$$E^TX_kE=Q+A^TX_{k+1}A-A^TX_{k+1}B\big(R+B^TX_{k+1}B\big)^{-1}B^TX_{k+1}A,$$

$$k=K-1,\ldots,0.$$

On p. 65, Reference 6 should read:

6 P. Deuflhard, E. Hairer, and J. Zugck, One-step and extrapolation methods for differential-algebraic systems, *Numer. Math.* 51:501–516 (1987).

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